

WHAT IS CLAIMED IS:

1. A cellular data packet, comprising:
  - a preamble for collision determination and synchronization;
  - a start-of-frame delimiter (SFD);
  - 5 a destination address (DA);
  - a source address (SA);
  - a routing information block (RIB); and
  - an informational field.
2. The cellular data packet of claim 1, wherein said informational field
  - 10 comprises:
    - a type field for indicating whether said packet is a control packet or a service packet;
    - a status field;
    - a data field; and
    - 15 a cyclic redundancy check (CRC) field, including error detection and correction information.
3. The cellular data packet of claim 2, wherein said type field comprises:
  - a two-byte protocol identifier;
  - a two-byte sub-protocol identifier; and
  - 20 a two-byte service identifier.
4. The cellular data packet of claim 2, wherein said status field is configured to indicate whether said packet is an ACK or a NACK packet, the number of data packets pending, spread spectrum synchronization information, or whether said packet is native or routed.
5. The cellular data packet of claim 1, wherein said destination address
  - 25 comprises:
    - a region indicator for indicating a region location of a recipient user station;
    - a cell identifier for indicating a cell within said region; and
    - a cellular IP address of said recipient user station within said cell.
6. The cellular data packet of claim 1, wherein said source address comprises:
  - 30 a region indicator for indicating a region location of a transmitting user station;
  - a cell identifier for indicating a cell within said region; and
  - a cellular IP address of said transmitting user station within said cell.



associated with a respective frequency hop number, wherein said  
transmission/receiving stations are configured to actively transmit/receive data packets  
if said associated frequency hop number is determined to be available, and wherein  
each of said user transmission/receiving stations within a respective one of said  
5 plurality of cells remain synchronized to said base station based upon said periodic  
synchronization burst.

15. The cellular network of claim 14, wherein the common timing reference is  
determined from a global positioning satellite.

16. An cellular modem, comprising:  
10 a radio frequency unit for transmitting/receiving data packets; and  
a baseband-to-intermediate frequency conversion unit, having a cellular  
network routing engine based on cellular IP, configured to covert the baseband  
information from a computer into intermediate frequency information for processing by  
said radio frequency unit;  
15 wherein said modem is configured to serve as a router within said cellular  
network.

17. The cellular modem of claim 16, wherein said radio frequency unit is  
configured to operate in the MMDS, LMDS, ISM, ITFS and MDS spectrums.

00500780 : 050810